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ETHICS, A SCIENCE.

I. In popular parlance art and science are often confused. After seeing some brilliant bit of dexterity, as in some difficult game, we sometimes hear persons exclaiming: "Look at the science of that," whereas it is quite possible that the performer has very crude and ill-defined notions about his methods. He has the knack of the thing, but he cannot explain wherein the knack consists. In such a case the term science is misapplied. Science, as its etymology would indicate, is knowledge, not cleverness, but all facile correct performance has the character of art, which may be broadly defined as skill in the production, or skilled activity directed to the production, of some desired object other than knowledge. For example, the art of music is the activity which concerns itself with the production of certain sounds that please the ear by reason of their rhythmic character, their melody or their harmony. The musician may know nothing of the natural principles which underlie the operations of sound. He may be absolutely ignorant of the fact that different wave-lengths of vibrating atmosphere correspond to different pitches of the sound heard. He may know nothing of the theory of over-tones; he need not even have knowledge of the principles of counterpoint and harmony; and yet, in spite of all his musical ignorance, he may be able to please the most fastidious taste with the rich, sympathetic, soul-stirring or soul-quieting character of his musical performance. On the other hand, who has not known some tone-scientist who can tell all about timbre, melody, harmony, counterpoint, and a thousand other things in music, who knows how to finger the keys or the strings, whose execution is faultless, and yet whose playing 'has no soul in it'? We thus see that there is an art of music and there is a science of music. The musical scientist does not primarily aim at the production of music, but at the understanding of it. His ideal is complete knowledge of the principles underlying the art of music. His compositions are technical articles for scientific journals, not

operas or oratorios or songs. The musical artist, on the contrary, as artist, does not care for these laborious productions of the scientist, except in so far as they may perhaps enable him to attain some artistic effect he is striving after. His productions are melodies and symphonies. He makes music ; the musical scientist knows music. The motives actuating these two persons are very different. The scientist is prompted by love for the true, the artist by a love for the beautiful.

Very frequently, as in the case of music, the scientist studies what the artist produces. Indeed, every art forms or may form the subject matter of a science. Thus the art of building has given rise to the science of architecture, and the art of linguistic expression to such various sciences as rhetoric, etymology, syntax, prosody, phonetics, poetics. But not every science has a corresponding art ; thus the science of palæontology, which is concerned with fossils, has no art corresponding to it, for the reason that the facts which palæontology studies are not produced by human agency. Men discover, they do not make, genuine fossils. For our present purpose, we may classify all objects of scientific investigation into two distinct groups, one including all objects of human production and achievement, the other including objects not brought about by human agency. The sciences which deal with objects of the first group have correlated arts ; those which deal with objects of the second group have not.

While in the latter there is no danger of confusing art with science,—for the very good reason that there is no art present to lead to confusion,—in the former case confusion is frequent. A base-ball pitcher is said to be ‘scientific’ in his curves, when, as a matter of fact, he is not scientific at all. He ‘knows how’ to do it, but he does not know why he does it so. In this case an art is called a science. Often the mistake is the other way round ; that is, a science is called an art. For instance, logic is quite generally recognized now as a science and not an art, and yet not long ago perhaps the majority of writers on logic insisted on calling it an art. This was because correct thinking is an art, and it was uncritically assumed that therefore a knowledge of the methods of correct thinking must also be an art. The object of

knowledge—the art of thinking—was mistakenly confused with a knowledge of the principles controlling that object, *i. e.*, with the science of logic.

A mistake of this sort is at work in the minds of those who define ethics as the art of correct conduct. Morality is such an art, in which various persons are more or less proficient. Some moral lives have the high æsthetic finish of an exquisite poem, others the massive grandeur of a noble pile of masonry, while unfortunately too many are comparable only to ribald verse or meretricious architecture. When we speak of a man's weaving the web of his own character, of his hewing it out of unpromising material, of his refining it in the fire of adversity, and so forth, we are saying that life is an art, character an art-product, virtue an art-quality.

But this is no reason why ethics should be an art, any more than the fact that poetry is an art makes an art of poetics. Ethics bears the same relation to the moral life that poetics bears to poetic activity and poetic product. Ethics is the science of the principles of an art; it is a systematized knowledge of the ways in which a certain kind of art-activity is carried on, of the reasons why the results of that activity produce certain effects, in short, of the various relations in which a particular art-activity and art-product stand. Morality is an empirical fact having various bearings; the moral man and the immoral man are phenomena of every-day life, and are as amenable to scientific investigation as are poems and financial movements, chemical reactions and mechanical operations. There are many questions which the experienced existence of morality and immorality challenges us to answer if we can. Ethics, in its widest sense, is the name given to any systematic attempt to answer these questions. Such answers do not constitute an art but a more or less complete science.

II. The question has been much discussed whether ethics is a descriptive science. The majority of writers on ethics have considered it not descriptive, but normative; some have admitted the presence of a descriptive feature in ethics, but have recognized along with this a large independent mass of normative

character, while a few maintain that it is entirely descriptive and nowise normative.

A normative science may be, and often is, defined as a science which lays down standards, rules, or laws to be used in some sphere of activity. The question here is as to the meaning of the term 'lay down.' In what sense can science be said to lay down rules for the guidance of the simple? Take the science of hygiene for example. This science is regarded and expounded by many as a system of rules of practice: "Eat this, drink that, breathe deep, bathe often, and eschew excesses." But a little reflection will serve to show that what is really scientific in these prescriptions is not their mandatory character, but the implied statements of connection between certain courses of action and certain generally desired ends. "If thou dost these things, happy shalt thou be, and it shall be well with thee." The prescriptions we find in scientific writings are disguised statements of facts. The true scientist, as scientist, does not advise or exhort. He gives an unimpassioned recital of the facts in their connections. He does not lay down any rules of any sort for the guidance of anybody. He merely says: "This is the way things are." That is, all science is descriptive — descriptive not merely of isolated individual objects, but of objects in their interrelations. Now if a normative science is defined as a science which is not descriptive, it is not a science at all. Science is knowledge, not will. It is indicative, not imperative. Hence, if there are to be any normative sciences at all, another definition must be sought for them than that given above. A point of departure for such definition can be obtained in the fact that many things known by science have a bearing upon human desires and human wills. While knowledge is not power, it is light, and makes possible the use of power along lines of advantage to the agent. Not only may we know that strychnine is $C_{21}H_{22}N_2O_2$, obtained from nuxvomica, insoluble in water and ether and scarcely soluble in absolute alcohol, but readily soluble in ordinary alcohol, and when so dissolved turning the plane of polarization to the left; we may also know that it is a most powerful poison, and taken in any considerable quantities causes death. Now every one of these

statements about strychnine is descriptive, and purely so, the last no less than any of the previous ones. But to most persons there is a very decided difference in the statements. The last has a tendency to convert itself into an imperative. Now why this difference? The answer is easy. None of the items of information above given concerning strychnine except the last makes any appeal to the desires and will of most persons. The last item of information, however, has a very direct relation to normal human desires. Very few men want to be poisoned, hence the fact that strychnine poisons can be indirectly stated in a prohibition: "Don't eat it." The prohibition, however, taken literally as it stands, is not an expression of knowledge, but of will — the will to live and let live. This will abhors strychnine because it is known that strychnine tends to antagonize the will. Knowledge here determines the direction of the will, but the knowledge is not will, and the expression of the knowledge (in the indicative) must not be confounded with the expression of will (in the imperative). Science does not lay down the rule to avoid eating strychnine; it ascertains the fact that the man who eats strychnine, except in very small doses, dies. In view of this scientific information, the normal human will lays down the law to itself not to take strychnine as food. We may generalize from this case and say that no science lays down any rules whatever, hence, if a normative science is defined as a science that lays down rules, it must be replied that it is by that token not a science.

But while a science may not lay down rules in the sense of imposing them upon men, it may have rules of procedure as its object matter. There are many sciences of this kind. For instance, the science of jurisprudence does not make the laws of the land. It is nothing but the more or less systematic knowledge of the various laws that have prevailed and do prevail, of the various tendencies for good or evil possessed by these laws, and of the various objects of juridical will these laws indicate; in fine, it is knowledge of the various principles of law. Jurisprudence may disclose the disastrous results of a certain type of laws, as, for example, punitive laws impossible of enforcement; but as a *science* it goes no further. It does not proceed to dep-

recate such laws ; but the legislative reformer and the practical statesman desirous of avoiding the evils resulting from the presence of such laws in the code, urges their repeal. Science suggests procedure, but the demand for procedure is not made by knowledge, but by will ; not by unimpassioned science, but by strong clamant desires for certain objects. Science sets the objects before us and discloses the means by which they can be secured ; but unless, when means and end are thus set before us, our affections and desires rise up and set the machinery of will to work, there can be no imperative issued. Jurisprudence, then, does not lay down laws ; it merely sets forth facts, and men's likings and dislikes for these facts prompt them to action. But the facts which jurisprudence sets forth are facts in connection with rules of conduct. It is normative in the sense that it is a science which deals descriptively with norms.

What is true of jurisprudence is true also of ethics. Ethics did not create morality, nor does it legislate to moral beings better moral laws. It describes the various types of morality and the results flowing severally from these types. But it is not imperious or dictatorial. It does not command men everywhere to repent, to reform their ideals and better their habits. It merely says : " There are various ways of behaving observable among men, and others conceivable. These various ways have these respective characteristics and consequences." If a man says, " In defiance of these consequences, I will to conduct myself in this way," ethics is unconcerned, for ethics is systematic knowledge, and knowledge as mere knowledge is equally hospitable to every existent fact and to every law of connection. As Huxley, I think it was, once remarked, the fiercest cataclysms of nature, the wreck of matter and the crash of worlds, are as orderly occurrences and as beautiful illustrations of the laws of nature as the sabbatical peace of a summer sea. So are human folly and madness and immorality as much ethical phenomena to be treated by the science of ethics as are moral walk and conversation. But ethics does and can say to the immoral, " Your conduct is mischievous and detestable to those of your fellows who are normal,"— which again is a purely descriptive statement.

What has been said makes it evident that jurisprudence and ethics are abstract. They do not give expression to the whole psychic attitude of the scientist toward the objects of his investigation. The juriconsult, unless all milk of human kindness is dried up in him, is not only a man who knows law, but also one who likes some kind of law and some principles of legislation better than others. His legal knowledge is only a part of his mental endowment, for to a scientist science may not be the only thing of value in the universe. So to the ethical scientist practical moral questions may be of stupendous interest. He may be the supporter of a crusade against intemperance or impure civil service ; but this fact would be due to his temperament and general affectional nature, enlightened, it is true, but not created, by his ethical knowledge. An ethicist is not *ipso facto* a man of high moral ideas, but his scientific impartiality need not make him a practically impartial onlooker in the theatre of the moral life. As a scientist he may be impartial, as a man he may have his decided preferences. But his actual preferences must not be allowed to interfere with his impartial scientific attitude. An unimpassioned survey of all the accessible facts, unbiased generalization from the facts to general principles, — this is the task of ethics and this task is entirely descriptive.

But such description does not exclude scientific criticism. It is compatible with an appreciation of objective values. This may not at first be clear, for are not all values subjective ? Yes, in a certain sense values are subjective. But in that same sense it would be hard to find anything objective. Value may be as objective as color. No ornithologist is deterred from describing orioles as orange-breasted, because, forsooth, to the color-blind man they may be dirty gray. Again, the chemist does not feel it necessary to qualify as subjective the statement that hydrogen sulphide has a stinking smell, because only to normal olfactory organs is the smell disagreeable. Many — if not all — objective scientific statements are objective in the sense of being valid of all normal human experience. Now objects have value that is objective in the same sense. For instance, money has an objective value, not because apart from the affective natures

of conscious beings it would still be of absolute worth, but because its value is a generally recognized fact in a community of conscious beings. On this account it is possible for the economist to criticise the efficiency of the various articles which serve as money. This criticism consists in the purely objective description of the consequences of the use of these various things. He shows that, when a great amount of paper is circulated and is not redeemable by gold or silver, it depreciates. This is criticism, but it is mere description. Now this unimpassioned description of consequences which are disagreeable is easily confounded with a hortatory treatment of the subject, for the very good reason that often the economist, assuming the existence of certain likes and dislikes, loads his statement of economic fact with economic harangue, and because the reader often meets the scientific statement with very strong emotional and voluntary reaction. But the harangue of the economist and the feelings and resolutions of the reader or hearer are not science, though they may be the normal response to scientifically ascertained fact. The science in it all is nothing but the methodically obtained knowledge of fact ; and this knowledge often includes, as in this case, a knowledge of unpalatable circumstances. An unimpassioned expression of such knowledge of unrelished but removable fact is scientific criticism. Such criticism may play a large part in ethics ; but in any objective ethics the criticism must not be a philippic against some practice merely obnoxious to isolated personal prejudice, but a true statement of the harmful consequences of certain modes of conduct.

III. It is often debated whether ethics is a theoretical or a practical science. What has already been said as to the normative and yet merely descriptive character of ethics should help us solve this question. Just as all sciences are descriptive, so all sciences are theoretical, that is, they are concerned with the rational explanation of experienced facts. Rational explanation is not the *a priori* demonstration of the necessity of facts. That is, it is not an attempt to show that things cannot possibly be other than they are. It is merely ascertainment of actual uniformities of connection between phenomena, *i. e.*, it is compre-

hension of natural principles or natural laws. A natural principle or natural law is an identity observable in nature, a discovered or discoverable sameness in the ways in which natural objects behave, or in the relations obtaining between certain objects. Thus a law of mechanics is an ascertainable identity in the way physical objects move or tend to move. The law of gravitation is a well-known example. This law is nothing but the fact that material bodies move or tend to move toward each other in a similar way, a way capable of description in the Newtonian formula: "Every particle of matter in the universe attracts every other particle with a force directly proportional to the mass of the attracting particles, and inversely to the square of the distance between them." So far as we know, every particle of matter might repel instead of attract every other particle of matter. And even if it did attract, it might attract in, say, inverse proportion to the distance instead of to the square of the distance between them. The number of possible substitutes for the actually obtaining law of gravitation is beyond recounting. The Newtonian law given above is *the* law only because it *is* the law. But though the law does not carry with it a self-evidence which excludes all possible rivals, as a matter of fact it satisfactorily *explains* many things otherwise inexplicable to our intelligence. We are so constituted that we do not find intellectual rest until the initial disjointedness of experience is removed by the discovery of uniformities of relations and of behavior in experienced objects. Any such discovery which brings order into what was chaos is highly gratifying to us as rational beings, for our theoretical reason is a tendency — of the nature of instinct — to look for such uniformities, and to see things in relations. Any object is 'explained' when this instinct is gratified. Now it would carry us too far afield to prove this statement in detail, *i. e.*, to show that in all explanation this is what happens. The exhibition of this fact belongs to the science of logic or epistemology. Here all that can be done is to state dogmatically that explanation is the satisfaction of the intellectual instinct to comprehend the laws of things, or their principles, or the uniformities of their relation and behavior,—these expressions all meaning the same thing.

Now the Greek word θεωρεῖν means originally to behold, to be a spectator of. But in psychological parlance, it was used to designate the contemplation of things in their relations, the grasp of them in their order, the knowledge of their laws. A theoretical knowledge of anything is properly, therefore, a systematic knowledge, a knowledge of them as systematically interrelated, a knowledge of their principles of connection. But this is exactly what every true science is. Hence every science is, as science, theoretical. To call a science theoretical is to commit a tautology, but, as with many tautologies, a useful end is gained. The attention is riveted by the tautological adjective on an essential characteristic, which may easily be, and in this case has been, ignored. All science, to repeat, is theoretical ; it is a matter of *seeing*, not of *doing*, and no new mark is added to the concept of science by calling it theoretical, but the danger is averted of supposing that a science may not be theoretical.

The fact, however, that all science is theoretical, does not preclude some sciences from being practical, provided that by practical is meant what it often means, namely, facilitating practice, advantageous in practice, having a direct bearing upon practice. Thus a practical suggestion is one that helps to the doing of something desired ; a practical idea is one that aids in the accomplishment of some purpose ; a practical rule is one the observance of which is of value in the performance of some work. Now it requires but little reflection to observe that very much of our knowledge is directly practical in this sense. It is not itself a doing of some work, unless we call the activity of knowing itself a work, but it is indispensable for the performance of the complicated work which men have to do. This is so obviously true that it is now often maintained that knowledge is to be accounted for as a result of natural selection. This means that knowledge as a psychic phenomenon is so useful to the knower that by its help he wins in the struggle for existence, and is thereby enabled to propagate his kind, transmitting to his descendants his useful power of knowing. Thus we have what has been called the doctrine of the bionomic value of knowledge, and the advocates of this doctrine include within it also the asser-

tion of the bionomic¹ value of science. This is, of course, to be expected. If knowledge is selected for survival because of its utility to the knower and to his race, systematic knowledge, or science, would disappear as a temporary freak unless it were likewise useful.

Now it is not necessary that we examine this doctrine in its entirety before we avail ourselves of the truth brought out by it. That truth is the truth of the practical utility of science. It is to science that we owe a very large part of our modern civilization, with all its practical achievements. But this is saying that science is practical. It helps in the performance of human work. But this practicality of science is not incompatible with its theoretical character. Indeed, it is because of its theoretical character that it is so practical. That is, it is because science is such a comprehensive knowledge of things in their interconnections and their laws that men with this knowledge of nature can do things never dreamed of in earlier days of human ignorance. Nothing has shown itself in human history to be so practical as broad, inclusive theory — if the theory be true. The world's work does not need less theory, but more. Infinitely much is waiting to be done, but it will wait till some one who *knows* comes along; it is held back because theoretical science has not gone forward more rapidly. The theorist, it is true, is not himself necessarily practical. But his knowledge communicated to others more interested in achievement than in science is the light which reveals the pathway human progress is to take.

But not all theoretical sciences have proved as yet to be equally practical. Not all have equal value in indicating ways by which objects of human desire can be reached. But no one can safely and confidently predict that these relative values will remain constant. Unexpectedly even to specialists in a science, that science may at a stroke prove to be one of the utmost value to the practical life of the world. All that can be done is to say that up to the present time one science has yielded more practical

¹ *I. e.*, value in promoting life. Bionomics is the science of "the economics of the living organism" (Minot, *Science*, N. S., Vol. XXI, No. 392), *i. e.*, the science of the principles which are involved in the maintenance of living organisms.

results than another. But this is no reason for discouragement in the pursuit of the less practical science, for what is last to-day may become first to-morrow. Thus we see that the practical character of any theoretical science is a variable quantity, and no science is to be judged unpractical merely because as yet it has borne no useful fruits. The seed-sowing must precede the harvest, and it is not always the most rapidly maturing crops that bring in the largest returns.

Now applying what has been said to ethics, we may say that ethics is a theoretical science, as all sciences are. Its practicality is hard to estimate, but is undoubtedly great. Not that it has any great money value, but money values are not the sole values. The practical value of ethics consists largely in two ends it gains. First, it secures a progressive liberation of the mind from the bondage of moral prejudices, many of which not only are irksome, but are serious bars to progress in civilization. It requires but little knowledge of the world to convince the open-minded observer that some of the heaviest weights men carry in the race of life are moral weights. Morality is itself not a handicap — far from it; it is one of the things without which no civilization is possible at all. But not all types of morality are equally conducive to human welfare. The morality of unenlightened benevolence, which requires that no beggar shall be turned from the door without a gift of some kind, has pauperized many a man who if alms had not been forthcoming would have turned his hands to useful work. The morality of Pharisaic condemnation of all fallen women has shut the door of reform in the face of many women who have loved not wisely but too well. The morality of alcoholic prohibition has closed law-abiding saloons, to open joints where all vice thrives. The morality of "Sunday closing" has in New York given rise to the Raines Law Hotel, and put a premium upon brothel-keeping. These are but a few instances from present day life in our own country of the incalculable harm which certain prevalent types of morality can work in a community. If we look to other places and other times, we can multiply instances without limit. Now one of the most potent correc-

tives of misguided morality is scientific ethical knowledge. It is, of course, not the only corrective. He would be a rabid intellectualist who should suppose that knowledge is the panacea of moral ills. The unconscious operation of natural laws does much toward eliminating noxious ideas. Many forms of harmful morality have been eliminated by natural selection. Races that have sunk deep in moral error have often lost stamina, and proved easy prey, by reason of their very perversity, to races of a better moral fibre. Again, unconscious imitation and appropriation of alien ideals have been mighty instruments of moral reform. Good communications have often purified bad manners and bad morals. But even here more or less systematic criticism of two conflicting codes has perhaps always played a part in helping to the installation of the better type of ideals. But granting that there are always many agencies at work for the betterment of morality, other than scientific criticism of morality, this criticism is and has been an extremely salutary influence in moral progress, in that it weakens the hold of blind and baneful prejudice upon the minds of men. Ethics, then, helps men to emancipate themselves from the tyranny of false and vicious ideals.

But its effects may be positive as well as negative, although, of course, here as elsewhere the positive and the negative go hand in hand. The positive work of ethics in moral reconstruction consists in the sometimes slow, sometimes rapid, emergence of new and better ideals, suggested by study of actual moral conditions. Liberation from prejudice would do little good if something affirmative, some positive ideals newly espoused, did not take their place. It would be the old story of casting a devil out of a house and leaving it swept and garnished, only to furnish habitation for seven other devils worse than the first. The empty room must be filled with something better, and scientific knowledge will often reveal what that something better should be. Thus the abolition of indiscriminate private charity might easily lead to reckless indifference to misfortune — something must be done in a wise way for those who cannot take care of themselves. A careful study of the actual conditions, and conservative experimentation, may suggest a way in which the

deserving can be helped without flooding the community with paupers. Sympathy for the victim of unscrupulous lust may give place to an indifference for female virtue. The evil of stoning every adultress must be removed, not by ignoring the adultery, but by devising some way that shall make it possible for the woman to go and sin no more. And knowledge of human nature and human conditions is indispensable for securing this consummation. This knowledge systematized is a part of ethics—it may be not of any ethics yet actualized, but of that ideal ethics for the realization of which every ethical scientist works. For it must be remembered that ethics, like every other science, is imperfect. We know only in part, but we strive toward the day when that which is perfect shall come and that which is in part shall be done away. This is the unattainable ideal of every science. The imperfection of science is its incentive, not its despair.

Ethics, therefore, is to be reckoned, both on the ground of its actual achievement, and more especially on the ground of its prospective accomplishment, as a practical science, though as science it is theoretical through and through. This combination of the theoretical and the practical in the character of the science gives rise to the question, In what spirit should it be prosecuted? Shall we study ethics out of intellectual curiosity or for its utility? The answer is that there is no necessary incompatibility in the two motives. They become incompatible only if an inordinate desire to turn our knowledge to practical use leads to undue haste in observation and generalization, and to lack of scientific caution generally. What makes knowledge scientific is not this or that motive which prompts to its acquisition. It is method, not motive, that counts. A man is no less of a scientific ethicist, even if he pursues his study mainly because thereby he can support his family and keep his own body and soul together—provided only he works with scientific caution in gathering and sifting his materials and in his generalizations. There is danger always that an extrinsic interest in a scientific subject may impair the integrity of scientific method. Hence the man who pursues a science merely because he hungers and thirsts after knowledge

is more likely, other things being equal, to get knowledge than the man who is prompted by other cravings as well. But other things are not always equal, and the one thing needful in any scientific study is to keep one's methods bright and clean and to use them scrupulously.

But desire for utilization of results is not the chief danger in ethics. For the objects studied are objects which generally make an indefinable claim to our veneration. But in ethics loyalty to traditional duty must yield to loyalty to truth. No reverence for moral laws, no devotion to moral ideals, however hallowed either laws or ideals may be by immemorial custom or by religious association, must be allowed to interfere with an impartial handling of them. As well may we expect the awe-stricken worshipper of a volcano to make any valuable contribution to the scientific knowledge of volcanic disturbances as to expect the unquestioning moral devotee to advance the study of morality. The man who trembles before the voice of conscience is not, while the fear is on him, in a suitable frame of mind to pursue with profit the ethical science. He is an important moral phenomenon ; he is not likely to be an important moral theorist. This is said without any disrespect for such a man. He is without doubt generally a very useful member of society, and in his way he is as useful as the ethicist is in his. One star differeth from another star in glory, and the exceeding glory is not always in the scientific star. The unquestioning loyalty of a man to his sacred duty may save a nation in a crisis ; what scientist has ever achieved such a result ? And even in the ordinary round of life the awed servant of duty is one variety of the salt of the earth, with perhaps more savor in it than is to be found in the scientific sort. But this is neither here nor there. The point is that not every man is by nature or disposition qualified for scientific work, and of those so qualified some are not qualified for work in the science of ethics, because they cannot deal with moral phenomena without fear and without favor.

The ethicist, however, need not be without moral enthusiasm, but his enthusiasm must be a zeal according to his ethical knowledge, not blind devotion to unchallenged duties. Yet it is well

that he should have had such a devotion. The larger and more varied his moral experience, the better fitted is he to deal with moral phenomena, provided only he can hold his experience off at arm's length and survey it as an objective fact. In support of this view, the weighty authority of Aristotle may be urged. "Everybody," said he, "is competent to judge the subjects which he understands, and is a good judge of them. It follows that in particular subjects it is a person of special education and in general a person of universal education, who is a good judge. Hence the young are not proper students of political¹ science, as they have no experience of the actions of life which form the premisses and subjects of the reasonings. Also it may be added that from their tendency to follow their emotions they will not study the subject to any purpose or profit." But by youthfulness Aristotle means not shortness of days, but immaturity of experience and lack of perspective, for he goes on to explain: "It makes no difference whether a person is young in years or youthful in character; for the defect of which I speak is not one of time, but is due to the emotional character of his life and pursuits. Knowledge is as useless to such a person as it is to an intemperate person. But where the desires and actions of people are regulated by reason, the knowledge of these subjects will be extremely valuable." Aristotle thus looked at ethics as having merely a practical value. "Its end is not knowledge, but action." But while he thus overlooked the purely theoretical character of the science, he rightly emphasized the need of personal moral experience, and also the need of regarding the experience with the clear, impartial eye of reason, not through the glasses of passion which cast a glamour over life and pervert the judgment. It is judgment that we want: calm, sober, collected judgment on life.

IV. It is an extremely important matter that, if ethics be a science, its methods should be scientific. Historically, various methods have been pursued, each with its own assumptions.

¹ Aristotle considered ethics a branch of political science, or rather, as we should call it in these days, of sociology. Hence the pertinence of this quotation to the present purpose. Indeed, it was in its bearings upon ethics that the remark was made. *Nic. Ethics*, I, 1. (Welldon's tr., pp. 4 and 5.)

Thus, for example, one of the most popular methods has been the theological. There can be no doubt that morality and religion have been closely connected in human experience. It is true that in some cases morality seems to have cast loose from religion altogether, but there are many thinkers who regard this divorce as merely temporary and accidental. They maintain that morality is rooted in man's relation to the Infinite and Eternal Ground of Things. Hence, they proceed, we must first work out a true theology, and ethics will be but a corollary from it. Not only is this a favorite way of dealing with the subject in books, but also in popular thought there is a marked tendency to regard morality as somehow dependent upon religion. Now, whatever may be said in favor of this method of solving the ethical problem, it is clear that an ethics thus obtained is not a natural science. It may satisfy some thinkers, but there always have been, and there probably always will be, persons unsatisfied with this procedure, as they are unsatisfied with an attempt to study the nature of the physical universe by theological means. Why not take the facts of the moral life and investigate them by the same methods that we apply to the study of other empirical facts? Why not be scientific in our treatment of the subject? When we come to think of it, it is hard to see why not, unless there is something in the nature of this particular subject which makes it intractable by this method; and that there is such a difficulty cannot properly be asserted until various attempts have been made without success. Even then the failure may be due to the difficulty of the subject, and not to any impossibility inherent in the nature of the problem. Before scientific ethics can be ruled out as impracticable, it must be shown conclusively that there is something in morality which science cannot grapple with, and no satisfactory demonstration of this fact has been given. It is easy enough to say what science has not done. It is not easy to say what science cannot do. It may be true that, after all the thought that has been spent on morality by men who have approached the subject with scientific methods, much remains unilluminated; that does not prove that ethics is not and cannot be a science. As a matter of fact, however, science has done more than theology to make

morality intelligible, and there is every reason to hope that it will do more in the future than in the past.

But while scientific, ethics does not boast of mathematical precision. The complexity of the subject is very great, and must be borne in mind by the reader of scientific works on ethics, else he will probably demand an exactness of statement which no one is prepared to make. Precise mathematical laws holding in the realm of morals have not been discovered. Rigid formulæ such as one finds in mechanics there are none. As Aristotle remarked long ago: "An educated person will expect accuracy in each subject only so far as the nature of the subject allows; he might as well accept probable reasoning from a mathematician as require demonstrative proofs from a rhetorician." "Our statement of the case will be adequate, if it be made with all such clearness as the subject-matter admits."¹

In this respect ethics is in similar case with such sciences as economics. No one expects an economist to lay down laws of the relations between supply and demand so exact that, given the number of persons who shall within a month desire to buy a certain commodity, and the amount of that commodity then available, any calculator can sit down and compute the exact price at which that commodity can be had in open market thirty days hence. The shrewd merchant and the successful speculator are engaged in such problems as this, and the uncertainty of their calculations shows that they have no infallible formula to fall back on. A civil engineer can tell quite exactly how many cubic yards must be excavated from a hillside in order to secure a road-bed of a certain grade and a certain breadth; but no manufacturer, unless he is working under contract, can tell with like precision how many yards of cloth he should turn out in order to be sure of securing a certain price for the cloth. There are too many unknown factors in the problem. If conditions remain very much the same as they have been, his calculations may be quite accurate; but an unreasonable financial panic, weather unparalleled even 'in the memory of the oldest inhabitant,' some new device in manufacture, these and a hundred

¹ Weldon's tr. of *Nic. Ethics*, pp. 4 and 3.

other unforeseen conditions may upset all his calculations. His problem is too complex for absolutely accurate mathematical treatment, and yet, in spite of this lack of mathematical precision in economic matters, there is a science of economics. What makes a study scientific is not so much the mathematical accuracy of its formulæ, as the method in which it is conducted. Now scientific ethics is scientific, as scientific economics is. It discovers certain laws, but cannot claim upon the basis of these laws to predict the moral future of mankind. These laws express general tendencies, and the knowledge of them serves to make actual morality much more intelligible.

V. We must now take a brief glance at the claim often made that ethics is a branch of philosophy, not a science. A thorough examination of this claim would necessitate the raising of questions as to the nature, tasks, and method of philosophy which we cannot attempt to answer here. For instance, before giving any adequate and satisfactory answer to the question whether ethics is a science or a part of philosophy, it would be necessary to ask whether science and philosophy are mutually exclusive, as the question would seem to assume. Is philosophy non-scientific, and is science non-philosophical? Various answers have been given to these questions, but it would require too much space here to discuss them and to justify ourselves in the selection of some one answer as preferable to the others. Whether there may be a valid philosophical ethics, and whether, if there be, its contents differ from those of a scientific ethics, and how its methods are different from those pursued by scientific ethics, — all these questions must be passed over, as requiring more space than is available here for their discussion. This article is written in the belief that when a satisfactory delimitation of the spheres of science and philosophy is made, the two will be found to have more points of connection than is commonly supposed; and yet that ethics will be found on the scientific rather than on the philosophical side of the boundary line. For all the data which the science of ethics must describe, organize, and explain are empirical data of the same order as the data of the other special sciences. The ethicist takes these data

and by comparison, by generalization of observed principles of connection, by the formation and testing of hypotheses — in short, by the methods of procedure called induction — he attempts to understand them. Ethics, dealing with phenomena or facts of experience by inductive methods, is an empirical science.

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